



NATIONAL OPEN UNIVERSITY OF NIGERIA
FACULTY OF SCIENCES

Course Code: CIT 891

Time: 2½ hrs

Course Title: Advanced Multimedia Technology

Course Credit Unit: 3

Instruction: Answer Question 1 (22 marks) and any four questions (12 Marks each)

1a) Describe briefly any three (3) home television distribution standards (9 marks)

1b) List five (5) desirable features for a typical Multimedia Computer (5 marks)

1c) Define the following terms:

- (i) Multimedia System (4 marks)
- (ii) Morphology in image processing (4)

2a) Describe briefly the Run-length Encoding technique (4 marks)

2b) Given the following binary image, use Run Length Encoding scheme to encode each of them (6 marks)

```
1 1 1 0 0 0
0 1 1 1 1 1
1 1 1 1 0 1
0 0 1 1 1 1
1 1 0 0 0 0
1 0 0 0 0 1
```

c) State major advantage and disadvantage of Run Length Encoding algorithm (2 marks)

3a) Explain the three (3) types of text that are processed by a multimedia computer. (6 marks)

3b) Mention three of the challenges facing multimedia systems. (3 marks)

3c) Describe the Binary format procedure of storing captured images in digital forms (3 marks)

- 4a) List three advantages of video compression (3 marks)
- 4b)** List three disadvantages of video compression (3 marks)
- 4c) Explain multi-level coding process for JPEG compression (**6 marks**)
- 5(a) Describe image enhancement and image restoration methods of image processing.
(**6 marks**)
- 5(b) Define and list four examples of multimedia applications (**4 marks**)
- 5(c) What does image segmentation refer to? (2 marks)
- 6(a) Identify three** advantages of data compression (3 marks)
- 6(b) List and briefly explain the four modes defined by JPEG (**6 marks**)
- 6c) List** three drawbacks of data compression (3 marks)
- 7(a) Write a short note on JPEG. (**4 marks**)
- 7(b) Explain Discrete Fourier Transform (4 marks)
- 7c) Describe briefly Discrete Cosine Transform (**4 marks**)